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Appl. No. 10/823,465  
 Amdt. dated October 13, 2006  
 Reply to Office Action of June 14, 2006

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/Thomas M. Hardman/

Attorney for Applicants

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/823,465	Confirmation No.: 4603
Applicant	:	Walter E. Red et al.	
Title	:	SYSTEMS AND METHODS FOR CONTROLLING AND MONITORING MULTIPLE ELECTRONIC DEVICES	
Filed	:	April 13, 2004	
TC/A.U.	:	2121	
Examiner	:	Norton, Jennifer L.	
Docket No.	:	1737.2.15	
Customer No.	:	21552	

Mail Stop RCE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO OFFICE ACTION

Dear Sir:

In response to the Office Action mailed June 14, 2006, please amend the above-identified application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 8 of this paper.

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Appl. No. 10/823,465  
Amtd. dated October 13, 2006  
Reply to Office Action of June 14, 2006

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method for controlling electronic devices through a host device, the method comprising:

establishing frequency-based, real-time electronic communications over a network between the host device and a controlled device, wherein electronic communication between the host device and the controlled device always occurs at an assigned control frequency;

assigning [[a]] the control frequency for the controlled device using a  $2^N$  time slicing algorithm, where N is a non-negative integer, wherein each control frequency that is assigned has a value of  $2^N$ ;

generating, at the host device, control input for the controlled device; and

sending the control input to the controlled device at the assigned control frequency.
2. (Original) The method of claim 1, further comprising receiving, at the host device, output from the controlled device in response to the control input.
3. (Cancelled)
4. (Original) The method of claim 1, further comprising establishing real-time electronic communications with a plurality of controlled devices and assigning a discrete control frequency for each controlled device using the  $2^N$  time slicing algorithm, where N is a non-negative integer.
5. (Original) The method of claim 4, wherein N is independently determined for each controlled device of the plurality of the controlled devices.

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

6. (Original) The method of claim 1, wherein the  $2^N$  time slicing algorithm comprises assigning the control frequency at  $2^N$  hertz, where N is a non-negative integer that will yield a discrete control frequency in proximity to a preferred control frequency of the controlled device.

7. (Original) The method of claim 1, further comprising initiating a control loop process on the host device when electronic communication is established with a controlled device.

8. (Original) The method of claim 1, further comprising accessing the host device from a remote computing device via the Internet.

9. (Original) The method of claim 8, further comprising providing information relating to the controlled device to a user at the remote computing device.

10. (Original) The method of claim 9, further comprising receiving user input at the host device from the user at the remote computing device, wherein the input relates to the controlled device.

11. (Currently Amended) A computing device configured for controlling electronic devices, the computing device comprising:

a processor;

memory in electronic communication with the processor; and

executable instructions executable by the processor, wherein the executable instructions are configured to implement a method comprising:

establishing frequency-based, real-time electronic communications over a network between the computing device and a controlled device, wherein electronic communication between the computing device and the controlled device always occurs at an assigned control frequency;

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

assigning [[a]] the control frequency for the controlled device using a  $2^N$  time slicing algorithm, wherein N is a non-negative integer, wherein each control frequency that is assigned has a value of  $2^N$ ; generating, at the computing device, control input for the controlled device; and sending the control input to the controlled device at the assigned control frequency.

12. (Original) The computing device of claim 11, wherein the method further comprises receiving, at the computing device, output from the controlled device in response to the control input.

13. (Cancelled)

14. (Original) The computing device of claim 11, wherein the method further comprises establishing real-time electronic communications with a plurality of controlled devices and assigning a discrete control frequency for each controlled device using the  $2^N$  time slicing algorithm, where N is a non-negative integer.

15. (Original) The computing device of claim 14, wherein N is independently determined for each controlled device of the plurality of controlled devices.

16. (Original) The computing device of claim 11, wherein the  $2^N$  time slicing algorithm comprises assigning the control frequency at  $2^N$  hertz, where N is a non-negative integer that will yield a discrete control frequency in proximity to a preferred control frequency of the controlled device.

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

17. (Original) The computing device of claim 11, wherein the method further comprises initiating a control loop process on the computing device when electronic communication is established with a controlled device.
18. (Original) The computing device of claim 17, wherein the method further comprises initiating a torque/current control loop process at a microcontroller on the controlled device when the controlled device comprises a motor.
19. (Original) The computing device of claim 11, wherein the method further comprises accessing the computing device from a remote computing device via the Internet.
20. (Original) The computing device of claim 19, wherein the method further comprises providing information relating to the controlled device to a user at the remote computing device.
21. (Original) The computing device of claim 20, wherein the method further comprises receiving user input at the computing device from the user at the remote computing device, wherein the input relates to the controlled device.
22. (Currently Amended) A computer-readable medium for storing program data, wherein the program data comprises executable instructions for implementing a method in a computing device for controlling electronic devices, the method comprising:  
establishing frequency-based, real-time electronic communications over a network  
between the computing device and a controlled device, wherein electronic  
communication between the computing device and the controlled device always  
occurs at an assigned control frequency;  
assigning [[a]] the control frequency for the controlled device using a  $2^N$  time slicing  
algorithm, where N is a non-negative integer, wherein each control frequency that  
is assigned has a value of  $2^N$ ;

Page 5 of 10

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

generating, at the computing device, control input for the controlled device; and sending the control input to the controlled device at the assigned control frequency.

23. (Original) The computer-readable medium of claim 22, wherein the method further comprises receiving, at the computing device, output from the controlled device in response to the control input.

24. (Cancelled)

25. (Original) The computer-readable medium of claim 22, wherein the method further comprises establishing real-time electronic communications with a plurality of controlled devices and assigning a discrete control frequency for each controlled device using the  $2^N$  time slicing algorithm, where N is a non-negative integer.

26. (Original) The computer-readable medium of claim 25, wherein N is independently determined for each controlled device of the plurality of controlled devices.

27. (Original) The computer-readable medium of claim 22, wherein the  $2^N$  time slicing algorithm comprises assigning the control frequency at  $2^N$  hertz, where N is a non-negative integer that will yield a discrete control frequency in proximity to a preferred control frequency of the controlled device.

28. (Original) The computer-readable medium of claim 22, wherein the method further comprises initiating a control loop process on the computing device when electronic communication is established with a controlled device.

29. (Original) The computer-readable medium of claim 22, wherein the method further comprises accessing the computing device from a remote computing device via the Internet.

Appl. No. 10/823,465  
Amtd. dated October 13, 2006  
Reply to Office Action of June 14, 2006

30. (Original) The computer-readable medium of claim 29, wherein the method further comprises providing information relating to the controlled device to a user at the remote computing device.
31. (Original) The computer-readable medium of claim 30, wherein the method further comprises receiving user input at the computing device from the user at the remote computing device, wherein the input relates to the controlled device.

Page 7 of 10

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

**REMARKS/ARGUMENTS**

Claims 1-31 are pending in the present application. The Office Action mailed June 14, 2006 rejected claims 1-31 under 35 U.S.C. § 103(a). Reconsideration is respectfully requested in view of the above amendments to the claims and the following remarks.

Support for the above amendments may be found throughout Applicants' specification and drawings. For purposes of example, Applicants respectfully refer the Examiner to paragraphs [47]-[48], [52] and [79] of Applicants' specification, and to Figures 1-2.

**Rejection of Claims 1-31 Under 35 U.S.C. § 103(a)**

The Office Action rejected claims 1-31 under 35 U.S.C. § 103(a) based on U.S. Patent No. 6,499,054 (hereinafter, "Hesselink") in view of U.S. Patent No. 6,028,412 (hereinafter, "Shine"). This rejection is respectfully traversed.

The M.P.E.P. states that

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

M.P.E.P. § 2142.

Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

Applicants respectfully submit that the claims at issue are patentably distinct from the cited references. The cited references do not disclose, teach or suggest all of the limitations in these claims.

There are three independent claims at issue: claims 1, 11 and 22. Claims 1, 11 and 22 will be referred to collectively herein as the "independent claims."

Hesselink does not teach or suggest "establishing frequency-based, real-time electronic communications over a network between the host<sup>1</sup> device and a controlled device," as recited in the independent claims. Hesselink relates generally to "remote control of physical processes in a laboratory." Hesselink, col. 1, lines 9-10. However, the control network in Hesselink is not configured for "frequency-based, real-time electronic communications," as recited in claim 1. Hesselink indicates that the control network operates in accordance with the TCP/IP protocol. See id., col. 4, lines 56-63. The TCP/IP protocol is a collision-based packet sending protocol. In other words, messages are broadcast to recipients, but if packet collisions occur (i.e., the messages are not received by the recipient device), they are re-broadcast by the broadcasting device. Accordingly, the control network in Hesselink is not designed for "frequency-based, real-time electronic communications" as required by the independent claims.

Applicants acknowledge that Hesselink refers to "[o]bserving physical processes in real-time via the Internet." Hesselink, col. 10, lines 2-3. However, even though Hesselink uses the term "real-time," Hesselink is not referring to the "frequency-based, real-time electronic communications over a network" recited in claim 1. One of ordinary skill in the art would interpret the term "real-time" in Hesselink to mean "current time" or "near time," with minor delay(s) in observing or interacting with the controlled devices. In contrast, the independent claims recite that "electronic communication between the host device and the controlled device always occurs at an assigned control frequency." The "frequency-based, real-time electronic communications" recited in claim 1 are not possible if the standard TCP/IP protocol is used.

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<sup>1</sup> Claims 11 and 22 recite "computing device" instead of "host device."

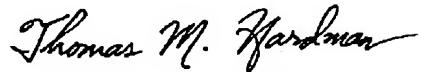
Appl. No. 10/823,465  
Amdt. dated October 13, 2006  
Reply to Office Action of June 14, 2006

Shine also does not teach or suggest "establishing frequency-based, real-time electronic communications over a network between the host device and a controlled device," as recited in the independent claims. In fact, Applicants cannot find any teaching in Shine related to electronic communication between a host device and a controlled device over a network.

Conclusion

Applicants respectfully assert that all pending claims are patentably distinct from the cited references, and request that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,



/Thomas M. Hardman/

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Thomas M. Hardman  
Reg. No. 51,777  
Attorney for Applicant

Date: October 13, 2006

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Page 10 of 10

JAN 09 2007

PTO/SB/30 (09-04)

Approved for use through 07/31/2008. OMB 0851-0031  
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**Request  
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**Address to:**  
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P.O. Box 1450  
Alexandria, VA 22313-1450

Application Number	10/823,465
Filing Date	April 13, 2004
First Named Inventor	Walter E. Red
Examiner Name	Jennifer L. Norton
Group Art Unit	2121
Attorney Docket Number	1737.2.15

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**  
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
  - a.  Previously submitted. If a final Office Action is outstanding, any amendments filed after the final Office Action may be considered as a submission even if this box is not checked.
    - i.  Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
    - ii.  Other \_\_\_\_\_
  - b.  Enclosed
    - i.  Amendment/Reply
    - ii.  Affidavit(s)/Declaration(s)
    - iii.  Information Disclosure Statement (IDS)
    - iii.  Other \_\_\_\_\_
2. **Miscellaneous**
  - a.  Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
  - b.  Other \_\_\_\_\_
3. **Fees** The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.
  - a.  The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 13-0763
    - i.  RCE fee required under 37 C.F.R. § 1.17(e)
    - ii.  Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)
    - iii.  Other Any deficiencies in the enclosed fee(s)
  - b.  Check in the amount of \$ \_\_\_\_\_ enclosed
  - c.  Payment by credit card

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on Form PTO-2038.

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

Signature	/Thomas M. Hardman/	Date	10/13/2006
Name (Print /Type)	Thomas M. Hardman	Registration No. (Attorney/Agent)	51,777

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Signature	/Thomas M. Hardman/
Name (Print /Type)	Thomas M. Hardman

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PTO/SB/22 (12-04)

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<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b> <b>FY 2005</b> (fees effective on or after October 1, 2004)		Docket Number (Optional) <b>1737.2.15</b>
<b>Application Number</b> 10/823,465		Filed April 13, 2004
<b>For SYSTEMS AND METHODS FOR CONTROLLING AND MONITORING MULTIPLE ELECTRONIC DEVICES</b>		
<b>Group Art Unit</b> 2121		Examiner Jennifer L. Norton
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response in the above identified application.		
The requested extension and appropriate small-entity fee are as follows (check time period desired):		
	<u>Fee</u>	<u>Small Entity Fee</u>
<input checked="" type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$120	\$60
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225
<input type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1590	\$795
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. <input type="checkbox"/> A check in the amount of the fee is enclosed. <input checked="" type="checkbox"/> Payment by credit card. <input type="checkbox"/> The Commissioner has already been authorized to charge fees in this application to a Deposit Account. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any underpayment of the above fees, or credit any overpayment, to Deposit Account Number <u>13-0763</u> .		
<b>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</b>		
I am the <input type="checkbox"/> applicant/inventor.		
<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71 Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96). <input checked="" type="checkbox"/> attorney or agent of record. Registration Number: 51,777 <input type="checkbox"/> attorney or agent under 37 CFR 1.34(a). Registration number if acting under 37 CFR 1.34(a). _____.		
<u>/Thomas M. Hardman/</u> Signature		October 13, 2006 Date
<u>Thomas M. Hardman</u> Name		(801) 537-1700 Telephone Number
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.		
<input checked="" type="checkbox"/> Total of <u>1</u> forms are submitted.		

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Total Number of Pages in This Submission

Application Number	10/823,465
Filing Date	April 13, 2004
First Named Inventor	Walter E. Red
Art Unit	2121
Examiner Name	Jennifer L. Norton
Attorney Docket Number	1737.2.15

12

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<input type="checkbox"/> Remarks  As requested by Examiner Jennifer L. Norton, we are re-submitting the following documents that were originally filed with the USPTO on October 14, 2006: (1) RCE, (2) Amendment/Reply, (3) Petition for Extension of Time. The electronic acknowledgement receipt that we received is also enclosed.		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Madson & Austin		
Signature	/Thomas M. Hardman/		
Printed name	Thomas M. Hardman		
Date	January 9, 2007	Reg. No.	51,777

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Typed or printed name	Thomas M. Hardman	Date	January 9, 2007

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